

REMARKS

Claims 1-3 and 5-6 are pending. By this Amendment, no claims are cancelled, claims 1 and 5 are amended, and new claim 7 is added. Support for this Amendment can be found in the original application as filed, including, for example, paragraphs [0017], [0024], and [0026]-[0028]. As such, no new matter is believed to be added by way of this Amendment.

Claim Rejections – 35 U.S.C. § 112

The January 20, 2010 Office Action rejected claim 5 under 35 U.S.C. § 112, second paragraph, as it particularly relates to the phrase “...the desired period of time is...”. Applicants have amended dependent claim 5, and independent claim 1, which Applicants believe render this rejection moot. Accordingly, Applicants respectfully request reconsideration and withdrawal of the foregoing rejection.

37 CFR 1.55 – Claim for Foreign Priority

Pursuant to the Examiner’s previous request for an English language translation of the non-English language foreign application, Applicants hereby contemporaneously submit, pursuant to 37 CFR 1.55, the Declaration of Noriaki Ito with an English language translation of Japanese Patent Application No. 2004-076516, which was filed on March 17, 2004. As stated in the attached Declaration, the English language translation is believed to be true and correct.

Claim Rejections – 35 U.S.C. § 103

The January 20, 2010 Office Action rejected claims 1-3 and 5-6 under 35 U.S.C. § 103(a) as being unpatentable over JP 09-169897 to Mukai et al. in view of U.S. Publication No. 2003/0038405 to Bopp et al. and further in view of JP 2001-303489 to Kashiwai et al. The

Office Action admits that Mukai does not disclose an inorganic filler, holding the product at or near a certain temperature to crystallize the polylactic acid, or a ratio of the wood fibers to the polylactic acid fibers in a range of 7:3 to 5:5 by weight. By way of this Amendment, Applicants have amended independent claim 1 to more clearly define the invention and advance prosecution. Applicants respectfully traverse the rejection in light of independent claim 1, as amended, for several reasons.

The Cited References Fail to Teach, Disclose or Suggest All Claim Limitations

A *prima facie* case of obviousness has not been established, as the cited references, individually or in combination, do not teach, disclose or suggest all of the claim limitations of independent claim 1, as amended. The presently claimed invention in independent claim 1, as amended, recites:

A method for manufacturing a molded woody article, comprising:
compression molding a mat-shaped base material containing wood fibers, polylactic acid fibers and an inorganic filler at a temperature not less than a melting point of said polylactic acid fibers, thereby forming a flat plate-shaped base material; and

maintaining said molded base material at a temperature close to a crystallization temperature of said polylactic acid fibers for a period of time that allows a 100% crystallization rate of the polylactic acid fibers, thereby crystallizing the polylactic acid fibers,

wherein in the compression molding step, the base material is prepared such that a ratio of the wood fibers to the polylactic acid fibers is in a range of 7:3 to 5:5 by weight, a ratio of the inorganic filler to the polylactic acid fibers is in a range of 0.1 to 5% by weight, and a density thereof is 0.5g/cm³ or more.

Mukai et al. is directed at a biodegradable fiber reinforced molded article and its production, wherein the biodegradable fiber reinforced molded article is composed of a

biodegradable fiber of 5-500 parts and aliphatic polyester resin of 100 parts. Mukai et al. teaches that the method of manufacturing the biodegradable fiber reinforced molded article includes the steps of dispersing highly heat-resistant biodegradable fiber of 5-500 parts and the aliphatic polyester resin of 100 parts into a liquid medium, forming a sheet by removing the liquid medium, drying the sheet, and heating the sheet at a temperature above the melting point of the polyester and compressing it.

Bopp et al. is directed at a method for producing semicrystalline polylactic acid articles, which includes the steps of heating a sheet of amorphous polylactic acid resin to temperature between 80°C and 160°C until a semicrystalline sheet is formed, and thermoforming the heated sheet over a mold at a temperature of 80°C or less, preferably at a temperature no greater than 35°C.

Kashiwai et al. is directed at a biodegradable sheet for a garbage bag, which is composed of a complex polylactate fiber of 40-60 wt-% and 60-40 wt-% of wood pulp or Manila hemp fiber.

However, none of the cited references, individually or in combination, teach, disclose or suggest all of the claim limitations of the presently claimed invention, including at least (i) maintaining the molded base material containing wood fibers, polylactic acid fibers and an inorganic filler at a temperature close to the crystallization temperature of polylactic acid fibers allowing a 100% crystallization rate of the polylactic acid fibers, and (ii) in the molding step, the molded base material is prepared such that a density thereof is 0.5 g/cm³ or more.

Mukai does not even mention a crystallization rate, much less a density. Also, because Mukai does not disclose the claimed ratio of the wood fibers to the polylactic acid fibers in a

range of 7:3 to 5:5 by weight, as admitted in the January 20, 2010 Office Action, Mukai also cannot possibly even suggest the resulting claimed density. Bopp not only teaches forming semicrystalline articles absent of wood fibers, but the heated sheet is thermoformed at a temperature below 80°C, which is not even close to the crystallization temperature of the polylactic acid fibers of the presently claimed method.

The Cited References Teach Away from the Proposed Combinations of References

The January 20, 2010 Office Action relies upon Bopp for an inorganic filler and holding the product at or near a certain temperature to crystallize the polylactic acid. The only reason provided to combine the teachings of Bopp with the method of Mukai is “to increase the heat resistance of the molded article.” This reason to combine these two cited references is inadequate, however, as there is no evidence that the molded articles of Mukai lack adequate heat resistance. To contrary, Mukai states in the Problem To Be Solved portion of the Abstract that the resulting molded article “is excellent in heat resistance by using biodegradable reinforcing fibers.” Thus, the articulated reason to support the conclusion that it would be obvious to combine Bopp with the method of Mukai is inadequate, because the molded articles of Mukai already contain the articulated heat resistance, without any modification being needed. As such, Mukai teaches away from the addition of any other components for the purpose of increasing the heat resistance of the molded article, including the proposed combination with Bopp as advanced by the Office Action.

The January 20, 2010 Office Action relies upon Kashiwai for the claimed ratio range of 7:3 to 5:5 for the wood fibers to the polylactic acid fibers. The provided rationale to practice the process of Mukai and Bopp with the teachings of Kashiwai to arrive at the claimed ratio range is

“that this would predictably result in a molded product that corresponds to an appropriate density or cost of materials.” Mukai, however, affirmatively states the mixture ratio of biodegradable fiber and aliphatic polyester for strengthening in this invention needs to be 100 parts aliphatic polyester resin and 5-500 parts biodegradable fibers, and ratios outside of that result in difficult processability. As such, Mukai teaches away from modifying the disclosed ratio, such that one of ordinary skill in the art would not predictably arrive at an improved, much less appropriate, molded article outside of the disclosed ratio.

Thus, a *prima facie* case of obviousness has not been established, as the cited references, individually or in combination, do not teach or suggest all of the features included in independent claim 1 as amended, and the combination of the cited references teaches away from the claimed invention. If an independent claim is non-obvious under 35 U.S.C. 103, then any claim depending therefrom is nonobvious. *In re Fine*, 837, F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988). Therefore, Applicant is not presenting additional arguments with respect to the patentability of the dependent claims, although Applicant does not acquiesce to any of the rejections and reserves the right to raise additional arguments with respect to the patentability of such claims. As all remaining pending claims depend directly or indirectly from one of the subject claims, Applicant respectfully requests that the rejections under §103 be withdrawn. Also, because a *prima facie* case of obviousness has not been established, Applicant does not comment further here on the suitability of combining or modifying the cited references. Thus, reconsideration and withdrawal of the rejection of claims 1-3 is respectfully requested.

Application No. 10/593,220

In view of the foregoing, it is submitted that this application is in condition for allowance. Favorable consideration and prompt allowance of the application are respectfully requested.

The Examiner is invited to telephone the undersigned if the Examiner believes it would be useful to advance prosecution.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'B. Stender', with a long horizontal flourish extending to the right.

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